REMARKS

Claims 1-8 are pending in the application. Claims 1-8 stand rejected. Applicants wish to thank the Examiner for withdrawing the finality of the prior Office action.

Specification

On page 2 of the Office action, Applicants are reminded of the proper language and format for an abstract. Applicants thank the Examiner for bringing these guidelines to their attention.

37 C.F.R. §1.72(b) recites in relevant part "[t]he abstract in an application filed under 35 U.S.C. 111 may not exceed 150 words in length. The purpose of the abstract is to enable the United States Patent and Trademark Office and the public generally to determine quickly from a cursory inspection the nature and gist of the technical disclosure."

Applicants respectfully submit that the Abstract of the instant application complies with the statutory requirements.

Rejections under 35 U.S.C. §102

Claims 1 and 3-5 are rejected under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 5,936,991 to Lang *et al.* ("Lang"). For the reasons that follow, Applicants respectfully traverse this basis of rejection.

Claim 1 of the instant application recites in part "[a] diode laser comprising ... at least *two opposed grooves* in a surface thereof, *the grooves suppressing only multimode radiation.*" [Emphasis added.]

In contrast, Lang is generally directed to a power amplifier device that improves beam quality by using nonlinear edges in the gain stripe. (See Abstract.) Lang does not teach or

suggest that the nonlinear edges suppress multimode radiation. Indeed, Lang discloses that the device includes *a multimode amplifier region 85 that is preferably flared* and integrated with a single-mode region 83. (Column 2, lines 28-31 and column 3, lines 2-6; emphasis added.)

According to Lang, the nonlinear edges, or "soft-edges," of the flared segment improve the profile of the near field pattern. (Column 3, lines 59-66.) Figure 3 of Lang shows the near field of a conventional "hard-edge" flared amplifier, while Figure 5 of Lang shows the near field pattern produced by a laser amplifier of Figure 4 or 6 of Lang (which corresponds to a laser amplifier with non-linear edges). Consequently, while the nonlinear edges may improve the beam quality, Lang does not teach or suggest that the nonlinear edges suppress multimode radiation.

Accordingly, because Lang fails to teach or suggest opposed grooves that suppress multimode radiation, Applicants respectfully submit that it cannot anticipate independent claim 1, and Applicants respectfully request that this rejection under 35 U.S.C. §102(e) be reconsidered and withdrawn.

Claims 1, 3, and 4 are rejected under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 5,657,339 to Fukunaga. ("Fukunaga"). Applicants respectfully traverse this basis of rejection.

Fukunaga is generally directed to a semiconductor laser device that produces a laser beam in the fundamental transverse mode. The device includes uneven side surfaces in a tapered waveguide region. (See Abstract.) Non-single-mode waves that reflect off the end face of the resonator cavity are scattered by the uneven surface of the flared region, thereby diminishing their intensity. (Column 5, lines 37-54.) Therefore, the device of Fukunaga differs from Applicants' invention both structurally and functionally.

As recited above, claim 1 of the instant application requires two opposed grooves suppressing multimode radiation, which Fukunaga fails to teach or suggest. Instead, Fukunaga features unevenness formed on the side surface of the tapered region. Unlike the present invention, *Fukunaga does, in fact, permit multimode radiation to propagate in the flared region* and to reflect off the end face of the resonator cavity. Fukunaga merely prevents multimode radiation from resonating in the cavity in a manner that achieves *lasing*.

In contrast, Applicants' opposed grooves, which are etched into the top surface of the ridge at the beginning of the flared region, suppress multimode radiation before it reaches the end face of the resonator. The uneven side surfaces of Fukunaga do not extend far enough into the resonator cavity to function in this manner. Fukunaga, therefore, fails to disclose opposed groves and fails to function in a manner similar to Applicants' invention.

Accordingly, Applicants respectfully submit that Fukunaga fails to teach or suggest opposed grooves that suppress multimode radiation, and therefore respectfully request that this rejection under 35 U.S.C. §102(e) be reconsidered and withdrawn.

Rejection under 35 U.S.C. §103

Claims 2 and 6-8 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Lang. Applicants respectfully traverse this basis of rejection.

As recited above, Applicants respectfully submit that Lang does not teach or suggest all the recited limitations of independent claim 1. Accordingly, Applicants respectfully submit that claims 2 and 6-8 are allowable as depending from allowable base claim 1.

CONCLUSION

In view of the above remarks, Applicants submit that all claims are now allowable and respectfully requested withdrawal of the rejections. If the Examiner believes that a telephone conference with Applicants' attorney would be helpful, the Examiner is invited to contact the undersigned at the number below.

Respectfully submitted,

Date: January 30, 2004
Reg. No. 33,497
Tel. No. (617) 310-8108
Fax No. (617) 248-7100

Steven J. Frank
Attorney for Applicants
Testa, Hurwitz, & Thibeault, LLP
125 High Street
Boston, MA 02110

3012297